

## NOTES ON ORTHOPTERA FROM ARIZONA, NEW MEXICO AND COLORADO.

BY JAMES A. G. REHN.

The specimens mentioned in the following pages are almost all contained in the collection of the Academy, and chiefly represent collections made in the summer of 1902 in central Arizona, northern New Mexico and central Colorado by C. F. Oslar, and in the summer of 1903 by C. R. Biederman, at Florence, Pinal county, Arizona. A few specimens from Yuma county, Arizona, belonging to the Hebard Collection, have also been studied in this connection.

Family **FORFICULIDÆ**.***Labia melancholica*** Scudder.

Florence, Pinal county, Arizona. (C. R. Biederman.) Seven specimens of both sexes.

This species, described from either Waco or near Austin, Texas, has apparently been unrecognized since the original description until the capture of the above-recorded individuals.

Family **BLATTIDÆ*****Periplaneta americana*** (Linnæus).

Florence, Pinal county, Arizona. (C. R. Biederman.) Numerous individuals.

Family **MANTIDÆ**.***Litaneutria minor*** (Scudder).

Florence, Pinal county, Arizona. July 26, September 20 and October 9, 1903. (C. R. Biederman.) Three males, three females.

Two of the females show decided traces of a rich vermilion coloration, which apparently suffused the entire abdomen, thorax and limbs.

***Stagmomantis carolina*** (Linnæus).

Florence, Pinal county, Arizona. July 13, 1903. (C. R. Biederman.) Two males.

***Stagmomantis limbata*** (Hahn).

Florence, Pinal county, Arizona. July 26, August 10 and September 4, 1903. (C. R. Biederman.) One adult and two immature females.

Family **ACRIDIDÆ**.**Mermiria bivittata** (Serville).

Albuquerque, Bernalillo county, New Mexico. July 16, 1902. (Oslar.)

Salt Lake Valley, Utah. August 2, 1896. One male.

**Acrolophitus hirtipes** (Say).

Raton, Colfax county, New Mexico. August 1, 1902. (Oslar.)  
Four females.

**Boottettix argentatus** Bruner.

Florence, Pinal county, Arizona. July 13, 1903. (C. R. Biederman.) One adult female and four nymphs.

**Chlœaltis abdominalis** (Thomas).

Truchas Peak, Rio Arriba county, New Mexico. August 4, 1902. (W. P. Cockerell.) One female.

Inseparable from a female individual from Manitoba, Canada.

**Horesidotes cinereus** Scudder?

Yuma county, Arizona. September, 1903. One male. Coll. Morgan Hebard.

This specimen probably belongs to this genus and species, but several characters, such as the proportions of the prozona and metazona, do not agree with the description. These parts are said to be "of subequal length," while in the specimen at hand the metazona is decidedly shorter than the prozona. Generally, however, the specimen agrees very well with the description.

**Gomphocerus clepsydra** Scudder.

Truchas Peak, Rio Arriba county, New Mexico. 13,000–14,000 feet elevation and above timber line. August 2, 1902. (W. P. Cockerell.) One male, two females.

I am not prepared to make any critical remarks on the standing of the several American "species" of this genus, and accordingly the use of *clepsydra* as a full species should not be considered an expression of opinion, but simply the utilization of a term to designate a type the validity of which is, to say the least, doubtful.

**Boopedon nubilum** (Say).

Thumb Butte, Arizona. July 11, 1902. (Oslar.) One male.

**Ligurotettix kunzei** Caudell.

Florence, Pinal county, Arizona. July 1, 1903. (C. F. Biederman.) One male.

*Arphia arcta* (Scudder).

Jerome, Yavapai county, Arizona. June 26, 1902. (Oslar.) Two males, two females.

Albuquerque, Bernalillo county, New Mexico. July 12, 1902. (Oslar.) One female.

I cannot agree with Caudell<sup>1</sup> in uniting *A. taporata* with this species. They appear to me quite distinct, and separable by the length of the tegmina and wings in the female, and in the form of the vertex. In this connection I have examined thirty-seven specimens of the two species.

*Arphia canora* n. sp.

? 1902. *Arphia nictana* Scudder and Cockerell, Proc. Davenport Acad. Sci., IX, p. 28. (Not of Saussure.)

Types: ♂ and ♀; Salt Lake City, Utah (♂), and Albuquerque, Bernalillo county, New Mexico. (Oslar: July 15, 1902.) (♀)

Allied to *A. nictana* Saussure, but differing in the slenderer form, the narrower vertex, the more vertical face, the longer metazona and the slenderer posterior femora.

♂.—Size medium; form somewhat slender. Head with the occiput bearing several longitudinal rugæ, the median one extending forward to the tip of the scutellum of the vertex; scutellum pyriform, longer than broad, very slightly excavated, margins moderately high, the median carina broken centrally; lateral foveolæ elongate, subtrigonal, not strongly marked; frontal costa broad and subequal inferiorly, at the ocellus expanded and slightly and shallowly excavated, above the ocellus distinctly constricted, subequal, apex truncate, this portion with a distinct median carina; eye not prominent and about equal in length to the infraocular portion of the genæ; antennæ about equal to the head and pronotum in length. Pronotum with the median carina rather low, even, distinctly cut by the last sulcus; anterior margin very obtuse-angulate; posterior margin acute-angulate with the angle rounded; surface of the disk rugoso-granulate; lateral lobes of the pronotum subequal, deeper than wide. Interval between the metasternal lobes slightly longer than broad. Tegmina moderately long; apex obliquely truncate; greatest width about median. Wings not elongate, two-thirds as wide as long. Posterior femora robust, reaching to the apex of the abdomen, superior and inferior margins equally arcuate.

♀.—Similar to the male with the following important exceptions: Scutellum of the vertex broad, about as broad as long; frontal costa

<sup>1</sup> *Proc. U. S. Nat. Mus.*, XXVI, p. 785.

distinctly sulcate below the ocellus; antennæ somewhat shorter than the head and pronotum. Median carina of the pronotum lower than in the male; posterior margin of the pronotum rectangular with the apex rounded. Intervals between the metasternal lobes very slightly broader than long.

General color blackish-brown, sprinkled with small obscure blackish maculations. Abdomen and under surface dull yellowish in the male, varying from yellowish-brown to dark wood-brown in the females, and the paler specimens of the latter sex have the abdomen with regular lateral blotches of brownish-black. Tegmina of the general color. Wings with the disk flame-scarlet, the fuscous bar rather dark but fading on the posterior margin of the wing; apex suffused with fuscous; tænia rather broad, solid, but not reaching the base of the wing; costal margin of the color of the disk. Posterior femora externally with traces of several transverse dark bars, the apical one of which is fairly apparent and somewhat contrasts a weak pregenicular annulus of ochraceous; genicular region blackish; internal face with the pregenicular annulus yellowish and distinct, the remainder black with the superior and inferior margins cut by two broken bars of yellowish. Posterior tibiæ greenish-yellow (♂) or dull brown, dark apically; spines tipped with black.

*Measurements.*

	♂	♀
Length of body, . . . . .	24 mm.	27 mm.
Length of pronotum, . . . . .	6 "	6 "
Greatest width of pronotum, . . . . .	4.1 "	4.5 "
Length of tegmina, . . . . .	24 "	26.5 "
Greatest width of tegmina, . . . . .	5 "	5.5 "
Length of wing, . . . . .	19.5 "	23 "
Length of posterior femora, . . . . .	13.7 "	14.2 "

The series of this species examined comprises twelve specimens from the following localities: Salt Lake City, Utah (three males); Silver Lake, Utah [Skinner] (two males); Albuquerque, New Mexico [Oslar] (two females); Jerome, Arizona [Oslar] (three males and two females). The most striking variation exhibited by the series is in color, size being quite constant. The ground color in some individuals is almost uniform, in others strongly maculate, while several have the posterior margin and the entire lateral lobes of the pronotum conspicuously barred with the two primary shades. In several specimens the axillary field of the tegmina is straw-colored, while a great amount of variation is exhibited in the intensity of the external bars of the

posterior femora. The color of the disk of the wings appears to be constant.

**Arphia pseudonietana** (Thomas).

Las Vegas, San Miguel county, New Mexico. (Oslar.) One male, one female.

Albuquerque, Bernalillo county, New Mexico. July 14, 1902. (Oslar.) One male.

Jerome, Yavapai county, Arizona. (Oslar.) One male, two females.

**Encoptolophus subgracilis** Caudell.

Florence, Pinal county, Arizona. May 8, July 10 and August 25, 1903. (C. R. Biederman.) Four females.

One of these specimens is considerably smaller than the others, but otherwise they are structurally uniform. The disk of the pronotum, top of the head and the posterior femora are pea-green in one specimen; the others have these parts of the brownish shades noted in the original description.

**Camnula pellucida** (Scudder).

Prescott, Yavapai county, Arizona. (Oslar.) One male.

Thumb Butte, Arizona. (Oslar.) One immature female.

**Hippiscus zapotecus** (Saussure).

Pecos, San Miguel county, New Mexico. June 20, 1902. (W. P. Cockerell.) One female.

Las Vegas, San Miguel county, New Mexico. July 20, 21 and 25, 1902. (Oslar.) Nine females.

**Hippiscus cupidus** Scudder.

Jerome, Yavapai county, Arizona. June 27, 1902. (Oslar.) Two males.

Prescott, Yavapai county, Arizona. May 19, 1902. (Oslar.) One female.

**Leprus elephas** Saussure.

Reef, Cochise county, Arizona. October 29, 1903. (C. R. Biederman.) One female.

This specimen is inseparable from individuals from the state of San Luis Potosi.

**Dissosteira carolina** (Linnaeus).

Gallinas Cañon, San Miguel county, New Mexico. July 23, 25 and 26, 1902. (Oslar.) One male, one female, four nymphs.

Sapello Cañon, San Miguel county, New Mexico. July 26, 1902. (Oslar.) One male.

Las Vegas, San Miguel county, New Mexico. July 21, 22 and 23, 1902. (Oslar.) Three males, three females.

Albuquerque, Bernalillo county, New Mexico. July 12, 15, 16 and 17, 1902. (Oslar.) Five males.

**Spharagemon inornatum** Morse.

Gallinas Cañon, San Miguel county, New Mexico. July 21, 1902. (Oslar.) One female.

**Derotmema laticinctum** Scudder.

Florence, Pinal county, Arizona. (C. R. Biederman.) One male.

**Derotmema haydeni** (Thomas).

Gallinas Cañon, San Miguel county, New Mexico. July 21, 29 and 30, 1902. (Oslar.) Six females.

Santa Fé, Santa Fé county, New Mexico. July 19, 1902. (Oslar.) One male.

Cerro del Corazon, New Mexico. July 16, 1902. (Miss Alice Blake.) Three females.

**Trepidulus rosaceus** McNeill.

1901. *Trepidulus rosaceus* McNeill, Proc. U. S. Nat. Mus., XXIII, pp. 394, 398. January 19, 1901. [San Bernardino, Cal.]

1901. *Araopteryx penelope* Caudell, Canad. Entom., XXXIII, p. 102. April, 1901. [Prescott, Arizona.]

Florence, Pinal county, Arizona. July 26 and August 10, 1903. (C. R. Biederman.) One male, one female.

The above synonymy is evident after studying each description. It is unfortunate that the exceedingly poor and insufficient description of *T. rosaceus* should have precedence over the excellent one of *Araopteryx*, but the law of priority leaves us no other course.

**Mestobregma kiowa** (Thomas).

Raton, Colfax county, New Mexico. (Oslar.)

This is apparently the first New Mexican record.

**Conozoa acuminata** Scudder?

Florence, Pinal county, Arizona. June 8 and July 9, 1903. (C. R. Biederman.) Two males.

Phoenix, Maricopa county, Arizona. April 22, 1902. (Oslar.) One male.

There is a little doubt as to the identity of these specimens, but they fit this form better than any other.

**Trimerotropis laticincta** Saussure.

Gallinas Cañon, San Miguel county, New Mexico. (Oslar.) One male, one female.

These specimens are grayer than a female individual from Sidney, Nebraska, received from Prof. Bruner. The female has the tegmina decidedly longer than in the Nebraskan example.

*Trimerotropis vinculata* Scudder.

Raton, Colfax county, New Mexico. (Oslar.) Two males, one female.

Albuquerque, Bernalillo county, New Mexico. (Oslar.) Three males, one female.

Florence, Pinal county, Arizona. May 3, 5 and 8 and August 18, 1903. (C. R. Biederman.) Two males, two females.

Phoenix, Maricopa county, Arizona. April 10, 17, 19, 22, 24 and 28, 1902. (Oslar.) Four males, six females.

Prescott, Yavapai county, Arizona. May 7, 1902. (Oslar.) Two males, one female.

*Trimerotropis rubripes* n. sp.

Type: ♀; Albuquerque, Bernalillo county, New Mexico. July 15, 1902. (Oslar.)

Allied to *T. agrestis* McNeill, but differing in the longer wings and tegmina, the weaker lateral fastigial carina and the darker coloration.

Size rather large. Head with the interspace between the eyes moderately broad; scutellum of the vertex slightly longer than broad, but slightly excavated and without a median carina; lateral foveolæ minute, subtrigonal; frontal costa not reaching the clypeus, faintly expanded inferiorly, superior portion subequal, all moderately sulcate; eye moderately prominent, rather small, decidedly less than the infra-ocular portion of the genæ in length; antennæ slight. Pronotum with the disk flat, median carina distinctly carinate anteriorly, but very weak posteriorly; prozona about half the length of the metazona; anterior margin very obtuse-angulate, posterior margin acute-angulate; lateral lobes of the pronotum subequal in width, the inferior margin posteriorly with a small angulate process. Interval between the metasternal lobes shallow and strongly transverse. Tegmina long, over five times as long as the greatest width; apex obliquely truncate. Wings slender, considerably more than half again as long as wide; apex somewhat falcate. Posterior femora robust, the inferior margin distinctly more arcuate than the superior.

General color ecru-drab, suffused more or less strongly with russet. Head and pronotum strongly infuscate and punctulate with russet. Tegmina with two transverse bars poorly represented by groups of russet annuli and small maculations, these almost limited to the dis-

coidal field, one median in position and the other equidistant from this and the base; distal portion of the tegmina hyaline except in the costal region. Wings with the disk about as broad as long, sulphur-yellow in color; fuscous bar broad, one-fourth as broad as the length of the wing, clove-brown in color; ulnar tænia broad but short, and not reaching half way to the base of the wing; apical third hyaline, except for the proximal portion of the costal margin, which is brownish. Posterior femora pale cinnamon externally, the carinæ dotted with blackish, and the superior face with traces of two fuscous bars; internally ecru-drab with a rather narrow preapical band and a broad medio-basal blotch of black; inferior sulcus orange-vermilion with a preapical bar of black; genicular region blackish internally. Posterior tibiæ orange-vermilion, the basal portion externally hoary; spines narrowly tipped with black.

*Measurements.*

Length of body, . . . . .	33.5 mm.
Length of pronotum, . . . . .	7 "
Greatest width of pronotum, . . . . .	5.5 "
Length of tegmina, . . . . .	36 "
Greatest width of tegmina, . . . . .	6 "
Length of wings, . . . . .	32 "
Width of wings, . . . . .	18.5 "
Length of posterior femora, . . . . .	15.8 "

The type is the only specimen of this species examined.

***Trimerotropis cyaneipennis* Bruner.**

Prescott, Yavapai county, Arizona. July 5, 1902. (Oslar.) Two males.

***Circotettix undulatus* (Thomas).**

Beulah, San Miguel county, New Mexico. 1902. (W. P. Cockerell.) One male.

Albuquerque, Bernalillo county, New Mexico. July 12 and 13, 1902. (Oslar.) One male, two females.

It is quite possible that some point more elevated than the immediate vicinity of Albuquerque is the real locality from which these latter specimens were taken.

***Circotettix suffusus* (Seudder).**

Las Vegas, San Miguel county, New Mexico. July 21, 1902. (Oslar.) One female.

Albuquerque, Bernalillo county, New Mexico. July 15, 1902. (Oslar.) One female.



The remarks made under the previous species apply with equal force to the above records.

**Hadrotettix trifasciatus** (Say).

Raton, Colfax county, New Mexico. August 1, 1902. (Oslar.) One male.

Las Vegas, San Miguel county, New Mexico. July 23, 1902. (Oslar.) One female.

Copper Basin, Arizona. (Oslar.) One immature male.

**Heliastus aridus** (Bruner).

Quartzsite, Yuma county, Arizona. April 20, 1903. Four females. These specimens agree very well with a large New Mexican series.

**Paropomala virgata** Scudder.

Yuma county, Arizona. September, 1903. Three males, seven females. Hebard Coll.

The great amount of color variation noticed by Scudder is also evident in this series, the range of general color being from chalky-white and brownish to dull greenish.

**Schistocerca shoshone** (Thomas).

Florence, Pinal county, Arizona. July 10, 25 and 26 and October 9, 1903. (C. R. Biederman.) Two males, four females.

**Schistocerca vaga** (Scudder).

Florence, Pinal county, Arizona. May 8, 31; June 4, 8, 24; July 23, 26; August 25; September 20, 1903. (C. R. Biederman.) Six males, seven females.

**Hesperotettix festivus** Scudder.

Florence, Pinal county, Arizona. August 10 and September 20, 1903. (C. R. Biederman.) Two males, three females.

These individuals fully agree with a series from Phoenix, Arizona. All five specimens possess reddish pregenicular annuli.

**Hesperotettix viridis** (Thomas).

Gallinas Cañon, San Miguel county, New Mexico. July 21, 1902. (Oslar.) One female.

Jerome, Yavapai county, Arizona. June 27, 1902. (Oslar.) One female.

The collection also contains a short-winged individual, apparently similar to the ones mentioned by Scudder, from Ruby Valley, Nevada, which I have doubtfully referred here. It was taken at Prescott, Arizona, July 5, 1902, by Oslar.

**Melanoplus herbaceus** Bruner.

Florence, Pinal county, Arizona. June 2 and August 10, 1903. (C. R. Biederman.) Two females.

**Melanoplus flavidus** Scudder.

Florence, Pinal county, Arizona. August 25 and October 3, 1903. (C. R. Biederman.) One male, one female.

Mr. Caudell has compared these specimens with U. S. National Museum material and regards them as *flavidus*. From specimens of *flavidus* from Wyoming, determined by Bruner, they differ in the slenderer form, in which respect they are approaching *M. elongatus*, but the structure of the cerci are not as in that species.

**Melanoplus excelsus** Scudder.

Truchas Peak (at timber-line, 13,000-14,000 feet), Rio Arriba county, New Mexico. August 2, 1902. (W. P. Cockerell.) Two males.

**Melanoplus atlansis** (Riley).

Florence, Pinal county, Arizona. May 8, 18, and 20 and September 20, 1903. (C. R. Biederman.) Three males, one female.

Las Vegas, San Miguel county, New Mexico. July 10, 1902. (Oslar.) One male.

**Melanoplus aridus** (Scudder).

Florence, Pinal county, Arizona. July 13, September 20 and October 3, 1903. (C. R. Biederman.) One male, two females.

**Melanoplus altitudinum** (Scudder).

Raton, Colfax county, New Mexico. August 1, 1902. (Oslar.) One female.

Prescott, Yavapai county, Arizona. June 9, 1902. (Oslar.) One male.

Copper Basin, Arizona. July 7, 1902. (Oslar.) Two females.

The above individuals fully agree in structure with a series from the Big Horn Mountains, Wyoming, but are slightly smaller; in this respect similar to several specimens from the Sacramento Mountains, southern New Mexico.

**Melanoplus sapellanus** Scudder.

Truchas Peak, Rio Arriba county, New Mexico. August 2, 1902. (W. P. Cockerell.) Three females.

**Melanoplus femur-rubrum** (DeGeer).

Prescott, Yavapai county, Arizona. June 7, 1902. (Oslar.) One male.

**Melanoplus canonicus** Scudder?

Florence, Pinal county, Arizona. September 20, 1903. (C. R. Biederman.) One female.

There is some doubt attached to the identification of this specimen.

**Melanoplus minor** (Scudder).

Pecos, San Miguel county, New Mexico. June 28, 1902. (Grabhens.) One male.

Prescott, Yavapai county, Arizona. June 9, 1902. (Oslar.) One male.

These specimens are inseparable from eastern individuals. This is the first record of the species from Arizona.

**Melanoplus differentialis** (Thomas).

Albuquerque, Bernalillo county, New Mexico. July 15, 1902. (Oslar.) One male.

**Melanoplus bivittatus** (Say).

Sapello Cañon, San Miguel county, New Mexico. July 26, 1902. (Oslar.) One female.

Albuquerque, Bernalillo county, New Mexico. July 12, 1902. (Oslar.) One male.

**Pæcilotettix sanguineus** Scudder.

Bill Williams Fork, Mohave-Yuma counties, Arizona. August. (F. H. Snow.) One male, one female.

**Dactylotum pictum** (Thomas).

Arroyo,<sup>2</sup> Pecos river, New Mexico. July 18, 1902. (Oslar.) One male, three females.

Cerro del Corazon, New Mexico. July 16, 1902. (Miss Alice Blake.) One male, three females.

Family **TETTIGONIDÆ**.**Hormilia elegans** Scudder.

Florence, Pinal county, Arizona. June 8, 14; July 13, 23, and September 20, 1903. (C. R. Biederman.) Two adult males, five adult females, four nymphs.

This species is exceedingly variable in coloration and slightly so in structure. The typical form of Scudder is represented more or less closely by five of the specimens in the collection, but the two adult males have the basic color of the tegmina olivaceous, and the "herring-bone" pattern of the typical form replaced by regularly disposed patches of glaucous green, while the distal portion of the posterior

<sup>2</sup> Apparently an error for arroyo, *i.e.*, torrent-bed or gully.

femora and the proximal portion of the posterior tibiæ are ornamented with a broad ring of glaucous green. The lateral carinæ of the pronotum also vary considerably in strength.

*Conocephalus ensiger* Harris.

Rio Grande river, New Mexico, July 17, 1902. (Oslar.) Three males.

This is the first record of the species from New Mexico, and while the data is vague, it is evident they were taken in northern New Mexico.

*Xiphidion fasciatum* (DeGeer).

Rio Grande river, New Mexico. July 15 and 16, 1902. (Oslar.) Two males.

*Capnobotes fuliginosus* (Thomas).

Jerome, Yavapai county, Arizona. June 27 and 28, 1902. (Oslar.) One male, one female.

*Drymadusa arizonensis* n. sp.

Type: ♂; Florence, Pinal county, Arizona. 1903. (C. R. Biederman.) Acad. Nat. Sci. Phila.

This specimen is unquestionably a member of the Palearctic genus *Drymadusa*, and is closest related to *D. limbata* Brunner,<sup>3</sup> from Asia Minor, but is easily separated by the much smaller size and slenderer tegmina, as well as the more apparent maculations of the same.

Size rather large; form considerably elongate. Head with the occiput rounded transversely, not elevated sloping gradually to the rather narrow, partially sulcate fastigium, which latter is deflected and touches the frontal process, width of the fastigium less than that of the first antennal joint; eyes wide apart, prominent, subglobose; antennæ as long as the tegmina. Pronotum selliform; anterior margin shallowly emarginate, posterior margin broadly and evenly rotundate; lateral lobes with the inferior margin rather narrowly rounded; posterior sinus very slight. Tegmina elongate, exceeding the apex of the abdomen by half their length, the greatest width is contained six and a half times in the length, apex obliquely truncato-rotundate, costal expansion regular but not marked, greatest basally and narrowing gradually toward the apex. Wings equal to the tegmina in length. Abdomen somewhat compressed; supra-anal plate triangular, deeply and very narrowly divided into two elongate acute lobes; cerci rather short, the apical portion with two distinct hooks on the internal face; subgenital plate compressed, deep, inferiorly carinate, apical margin triangularly incised. Anterior femora longer than the pronotum,

<sup>3</sup>*Prodr. Europ. Orth.*, p. 314.

internal inferior margin with three to four very distinct spines; tibiae with two spines on the external superior margin. Median femora slightly longer than the anterior, external inferior margin with one or two spines; tibiae with two spines on the external superior margin and three internal superior margin. Posterior femora slightly shorter than the head and body, apical half slender and subequal, basal half moderately expanded; tibiae slightly longer than the femora, compressed quadrate in section, regularly spined above, except basally, where the spines are fewer, inferior face with seven pairs of spines and several odd ones, upper inner calcar much exceeding the external in size; posterior tarsi of the type usual in the genus.

General color ochraceous buff (probably greenish in life) washed with apple-green on the tegmina. Head darker above than below; eyes hazel. Pronotum with an hour-glass-shaped figure on the median portion of the disk and a line along the posterior portion of the lateral lobes approximately parallel to the margin blackish-brown; posterior margin of the disk of the pronotum broadly bone-white. Tegmina with a distinct median longitudinal series of subcircular opaque whitish spots, flanked above by a short series not so distinct, a few poorly defined blotches along the anal margin and an irregular jumbled series in the costal field.

*Measurements.*

Length of body, . . . . .	29 mm.
Length of pronotum, . . . . .	6.8 "
Greatest dorsal width of pronotum, . . . . .	5 "
Length of tegmina, . . . . .	41 "
Greatest width of tegmina, . . . . .	6.5 "
Length of posterior femora, . . . . .	24.5 "

The type is the only specimen which has been examined.

***Atelopius notatus*** Scudder.

Jerome, Yavapai county, Arizona. June 26, 1902. (Osler.) One immature male.

Florence, Pinal county, Arizona. July, 1903. (C. R. Biederman.) One female.

The immature specimen was studied by Mr. Caudell, and compared with the type. This species was originally described from San Diego, California.

***Ceuthophilus arizonensis*** Scudder.

Jerome, Yavapai county, Arizona. June 26, 1902. (Osler.) One male.

Sapello Cañon, San Miguel county, New Mexico. July 25, 1902. (Oslar.) One female.

The only previous New Mexican record of this species is from Fort Wingate.

Family **GRYLLIDÆ**.

**Nemobius neomexicanus** Scudder.

Florence, Pinal county, Arizona. July, 1903. (C. R. Biederman.) One female.

**Gryllus personatus** Uhler.

Florence, Pinal county, Arizona. September 5, 1903. (C. R. Biederman.) One female.

Flagstaff, Coconino county, Arizona. July 12 and 13, 1903. (Oslar.) Eight males.

Phoenix, Yavapai county, Arizona. April 23, 1902. (Oslar.) One male.

All the specimens of this species examined are macropterous.

**Gryllus pennsylvanicus** Burmeister.

Florence, Pinal county, Arizona. July 12, 1903. (C. R. Biederman.) One female.

Flagstaff, Coconino county, Arizona. July 12, 1902. (Oslar.) One female.

Gallinas Cañon, San Miguel county, New Mexico. July 21, 1902. (Oslar.) One male, one female.

**Miogryllus lineatus** (Scudder).

Florence, Pinal county, Arizona. June 8, 1903 [one]. (C. R. Biederman.) All more or less immature, four males, two males.

The two females are much larger than the other individuals and have the heads solid blackish-brown.

**Ecanthus fasciatus** Fitch?

Florence, Pinal county, Arizona. July 26 and September 20, 1903. (C. R. Biederman.) Two females.

These individuals are referred here with considerable doubt.